

CLAIMS

1. A high toughness die-cast product comprising an Al-Mg casting alloy having $3.5 \text{ wt } \% \leq \text{Mg} \leq 4.5 \text{ wt } \%$, $0.8 \text{ wt } \% \leq \text{Mn} \leq 1.5 \text{ wt } \%$, $\text{Si} < 0.5 \text{ wt } \%$, $\text{Fe} < 0.5 \text{ wt } \%$, a sum $(\text{Ti} + \text{Zr})$ of the amounts of Ti and Zr added of equal to or greater than $0.3 \text{ wt } \%$, and a ratio (Ti/Zr) of the amounts of Ti and Zr added of at least 0.3 but not more than 2, with the balance being Al.
2. The high toughness die-cast product according to Claim 1, wherein a pouring temperature T is $720^{\circ}\text{C} \leq T \leq 730^{\circ}\text{C}$.
3. The high toughness die-cast product according to either Claim 1 or 2, wherein it is thin such that it has a minimum thickness t_1 of $1.2 \text{ mm} \leq t_1 \leq 3 \text{ mm}$, and it is large such that a maximum flow distance \underline{d} of a melt within a die cavity is 200 mm or greater.
4. A high toughness die-cast product in thin sheet form with a minimum thickness t_1 of $1.2 \text{ mm} \leq t_1 \leq 3 \text{ mm}$, the high toughness die-cast product being cast using an Al-Mg alloy by a die-casting method, having chill layers (2) on opposite faces thereof, and having a proportion P of the sum of thicknesses t_3 and t_4 of the two chill layers (2) relative to the minimum thickness t_1 set at 18% or greater, and the Al-Mg alloy having $3.5 \text{ wt } \% \leq \text{Mg} \leq 4.5 \text{ wt } \%$, $0.8 \text{ wt } \% \leq \text{Mn} \leq 1.5 \text{ wt } \%$, $\text{Si} < 0.5 \text{ wt } \%$, $\text{Fe} < 0.5 \text{ wt } \%$, and $0.1 \text{ wt } \% \leq$ at least one of Ti and Zr $\leq 0.3 \text{ wt } \%$, with the balance being Al.